Updated Validation Results for the Column Values of Ozone Measured by TES

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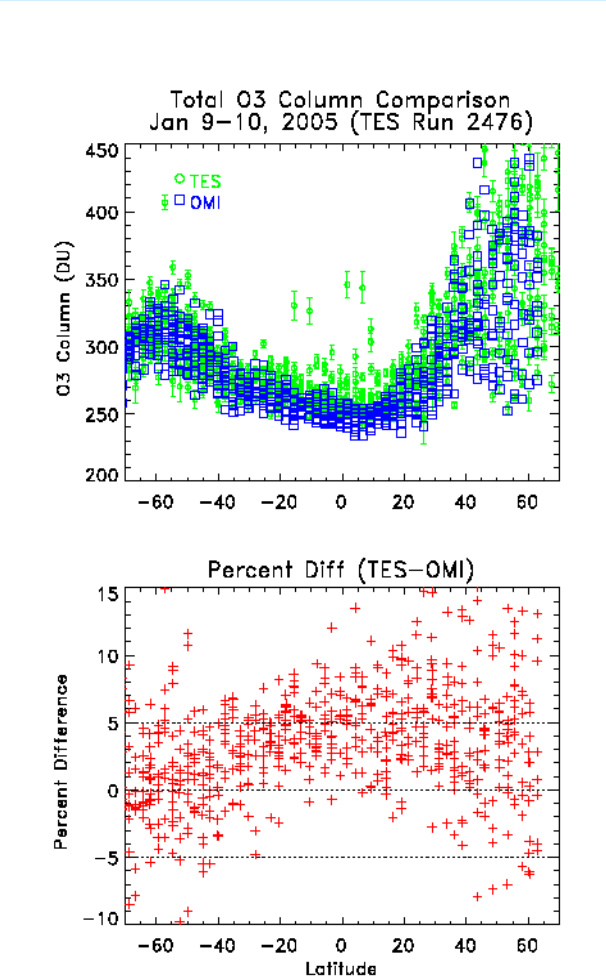
Jet Propulsion Laboratory/
California Institute of Technology

Aura Validation Working Group Meeting
September 12, 2006

Jet Propulsion Laboratory
California Institute of Technology

TES – OMI Total Ozone Comparisons



- Comparisons between OMI and TES v001 total ozone columns showed a 3-10% bias.
  - Consistent in both hemispheres
- Comparisons with v002 TES data show a smaller bias in general but differences between the NH and SH

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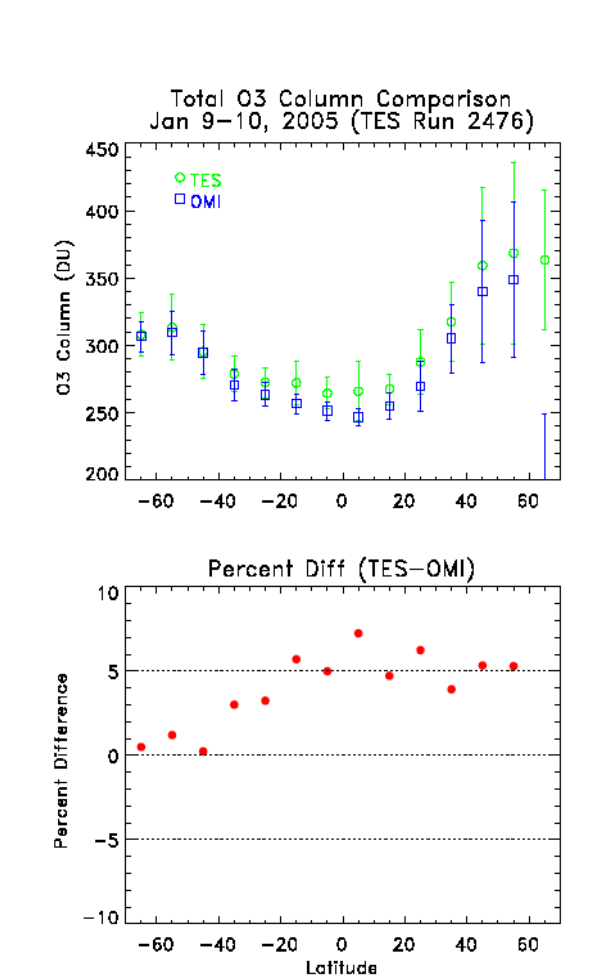
TES – OMI Total Ozone Comparisons



- Global survey from January 9-10, 2005
- Differences between TES and OMI (10° bins)
  - TES is higher than OMI at most latitudes
  - Percent differences less than 3% between 70°S and 20°S (often better)
  - 3-7% between 10°S and 60°N
- Differences in the a priori used by TES and OMI could part of the problem
  - TES higher for most latitudes
  - Particularly (0°-10°N)
  - Need to properly analyze the effect of the a priori on the TES column

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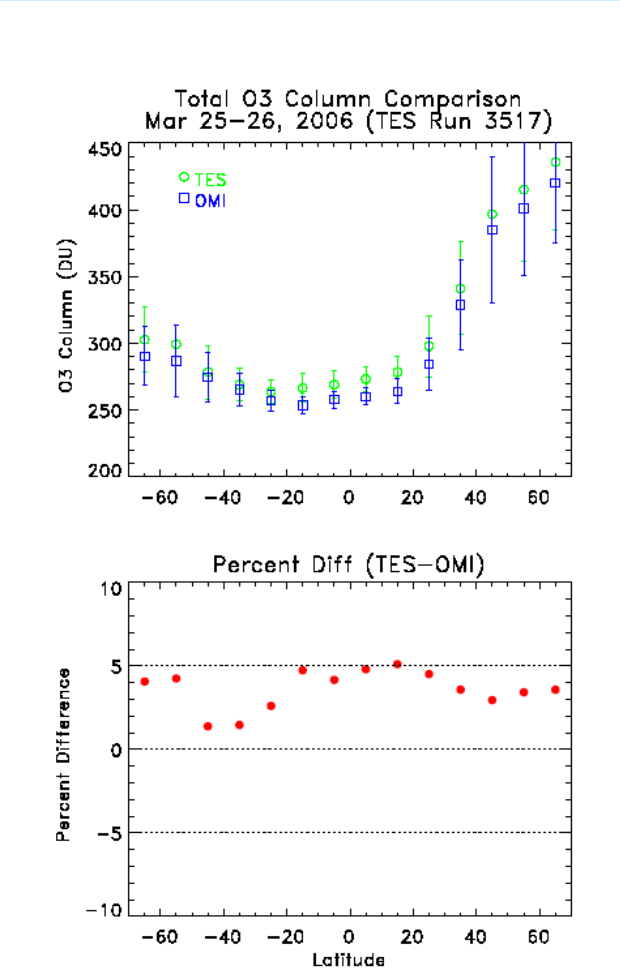

- Case for March 25-26, 2006
- Somewhat better for NH
- TES biased high

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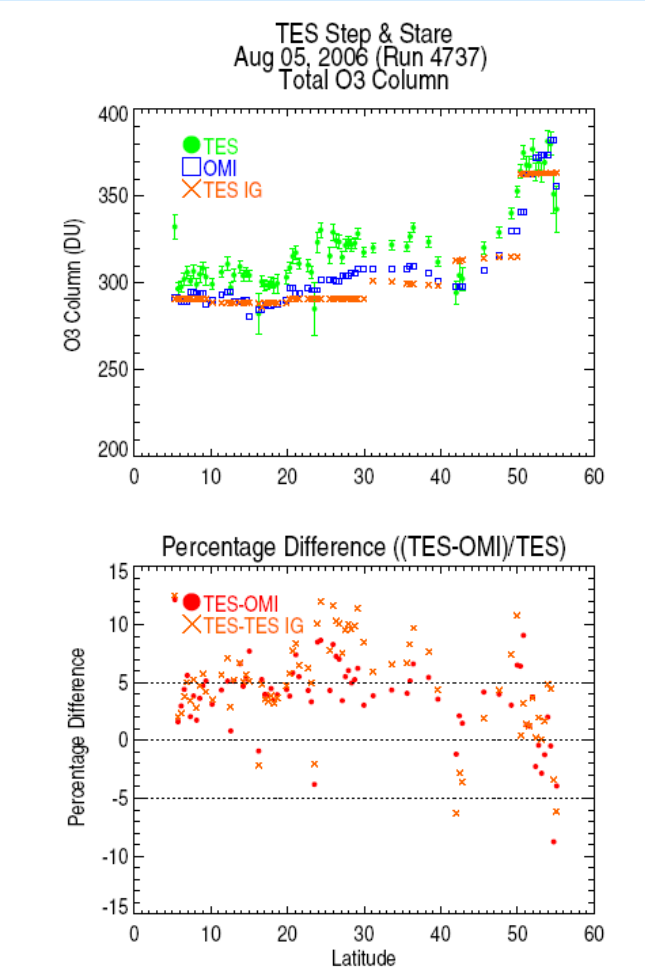
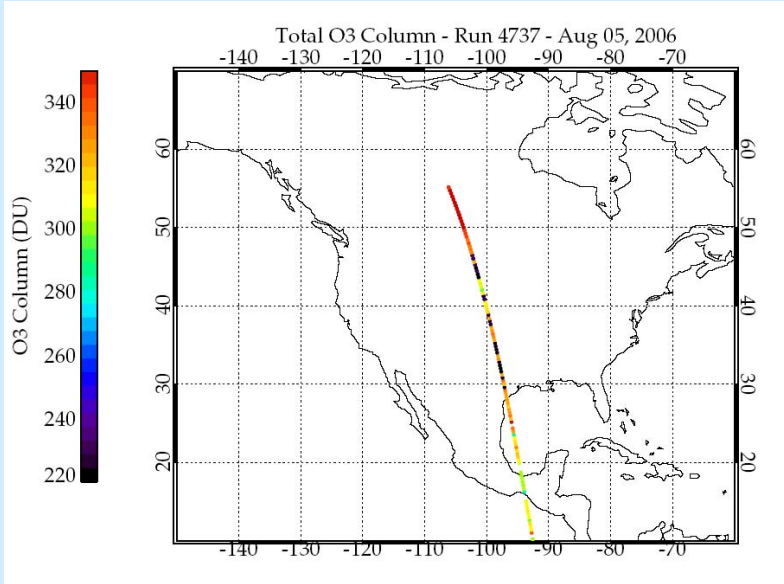
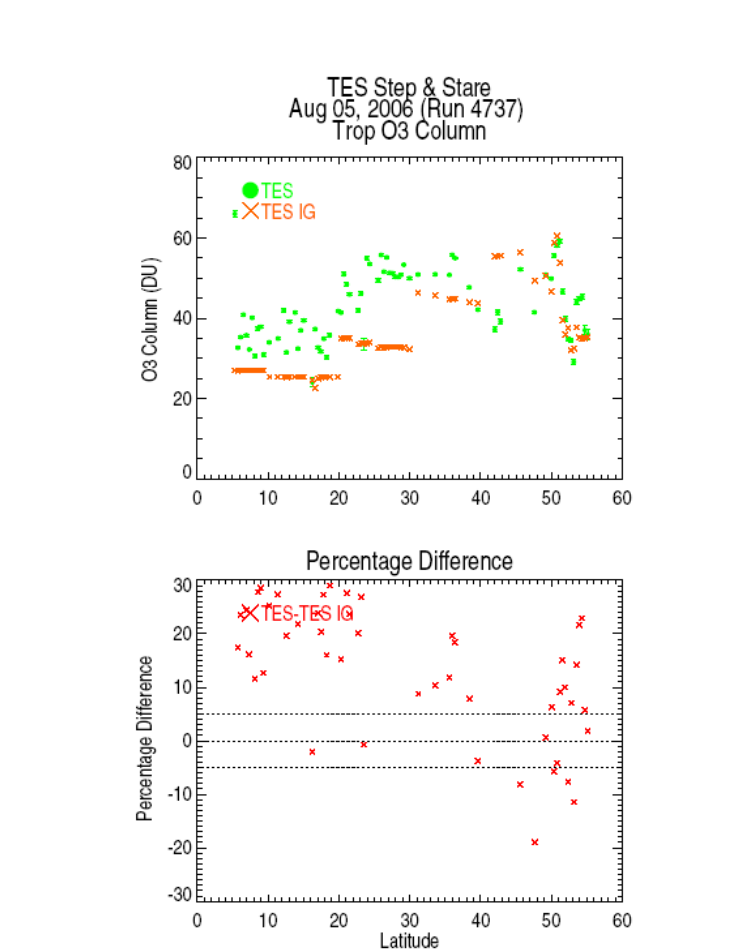
TES – OMI Total Ozone Comparisons

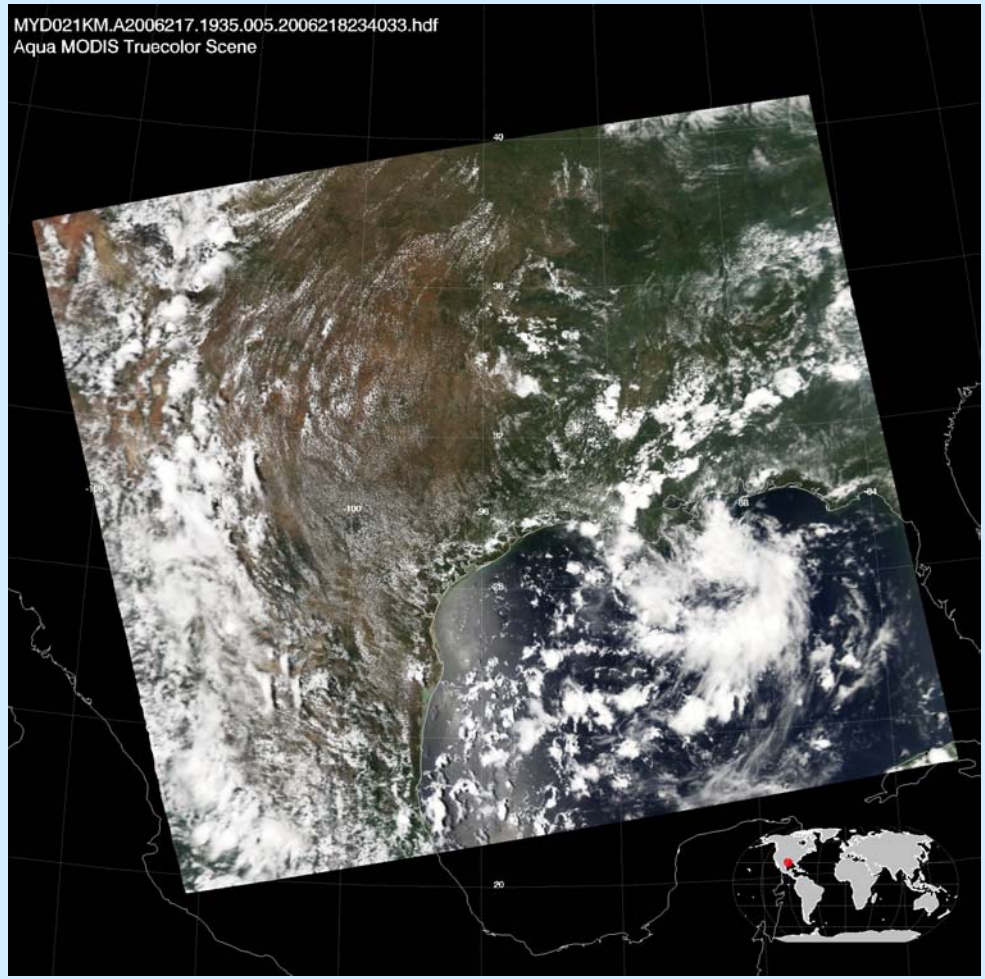


- Special Observation from August 2006
- TES consistently biased high



TES – OMI Total Ozone Comparisons





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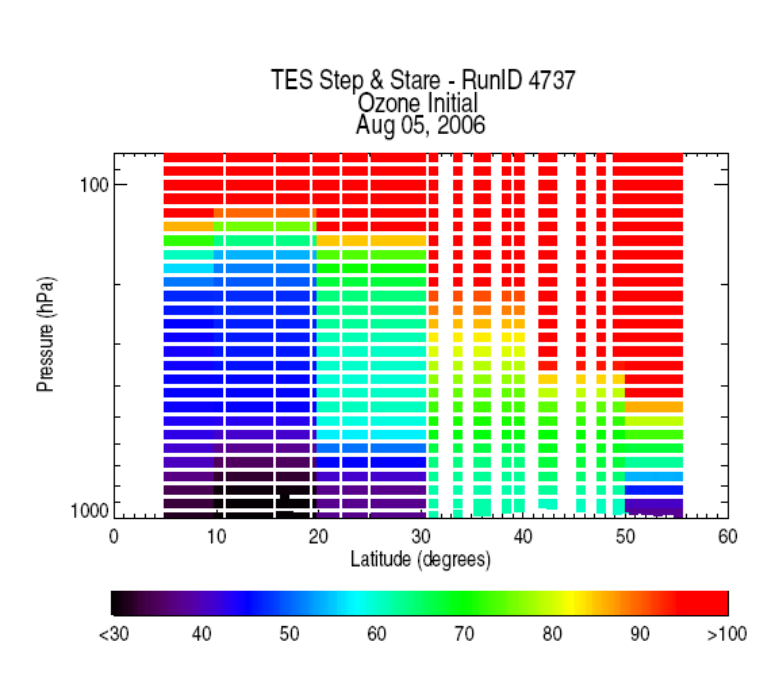
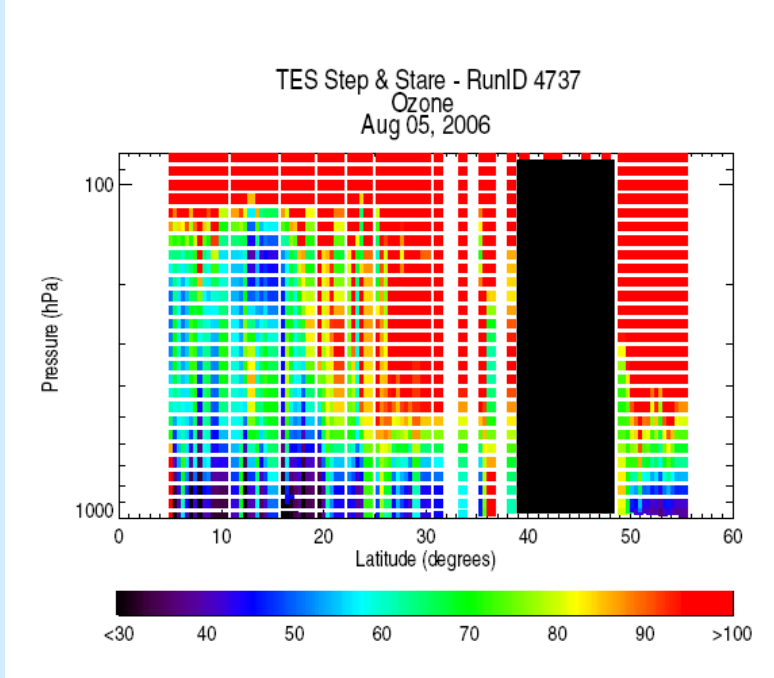
TES Ozone Curtain for Aug 5, 2006





- TES sees quite a bit of structure and high ozone in the middle troposphere

Summary

- TES v002 total ozone column values show a slight improvement in comparisons with OMI (TOMS) data.
  - More seasonal and geographic statistics needed
  - Need to quantify the effects of our *a priori* and do a more quantitatively rigorous comparison.
  - Comparisons with ground based data
- Comparisons with OMI/MLS tropospheric ozone residuals
  - Use TES vertical resolution to provide information of differences between TES and OMI column data.
  - TES v003 data products will include a tropospheric column
- Comparisons of TES stratospheric data with MLS

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